CLAIMS

1. An authentication apparatus for authenticating a transaction performed between at least two parties via a network,

said authentication apparatus comprising:

a first receiving means for receiving a first request including personal key information of a first transactor and information indicating a transaction content from said first transactor,

a first authenticating means for authenticating a legitimacy of said first transactor based on said personal key information included in said first request and generating first authentication information,

a first transmitting means for transmitting a second request including information obtained by deleting the personal key information of said first transactor from said first request and said first authentication information to said second transactor,

a second receiving means for receiving a reply with respect to said second request from said second transactor,

a second authenticating means for authenticating the legitimacy of said second transactor and generating second authentication information in accordance with said reply, and

a second transmitting means for transmitting said second authentication information to said first transactor.

2. An authentication apparatus as set forth in claim 1, wherein said personal key information of said first transactor is information relating to the charging of said first transactor.

3. An authentication apparatus as set forth in claim 1, further comprising a storage means for storing log information indicating a log of said transaction.

4. An authentication system for authenticating a transaction performed between at least two parties via a network,

said authentication system comprising:

a first communication apparatus used by a first transactor,

a second communication apparatus used by a second transactor, and

an authentication apparatus for authenticating said transaction,

wherein

said authentication apparatus comprises

a first receiving means for receiving a first request including personal key information of the first transactor and information indicating transaction content

from said first transactor,

a first authenticating means for authenticating a legitimacy of said first transactor based on said personal key information included in said first request and generating first authentication information,

a first transmitting means for transmitting a second request including information obtained by deleting the personal key information of said first transactor from said first request and said first authentication information to said second transactor,

a second receiving means for receiving a reply with respect to said second request from said second transactor,

a second authenticating means for authenticating the legitimacy of said second transactor and generating second authentication information in accordance with said reply, and

a second transmitting means for transmitting the second authentication information indicating the legitimacy of said transaction to said first transactor.

5. An authentication method for authenticating a transaction performed between at least two parties via a network,

said authentication method comprising the steps of:

receiving a first request including personal key information of a first transactor and information indicating transaction content from said first transactor,

authenticating a legitimacy of said first transactor based on said personal key information included in said first request and generating first authentication information,

transmitting a second request including information obtained by deleting the personal key information of said first transactor from said first request and said first authentication information to said second transactor,

receiving a reply with respect to said second request from said second transactor,

authenticating a legitimacy of said second transactor in accordance with said reply and generating second authentication information, and

transmitting said second authentication information to said first transactor.

6. An authentication method as set forth in claim 5, wherein said transaction is settled using the personal key information of said first transactor.

7. An authentication apparatus for authenticating a transaction performed between at least two parties via

a network,

said authentication apparatus comprising:

a first receiving means for receiving a first request including personal identification information of a first transactor and information indicating transaction content from said first transactor,

a first authenticating means for authenticating a legitimacy of said first transactor and generating a first authentication information in response to said first request,

a first transmitting means for transmitting a second request including said first authentication information and information indicating content of said transaction to a second transactor,

a second receiving means for receiving a reply with respect to said second request from said second transactor,

a second authenticating means for authenticating a legitimacy of said second transactor in accordance with said reply and generating second authentication information, and

a second transmitting means for transmitting said second authentication information to said first transactor.

8. An authentication apparatus as set forth in

claim 7, wherein

said first receiving means receives said first request further including the personal key information of said first transactor, and

said first authenticating means authenticates the legitimacy of said first transactor based on said personal key information.

9. An authentication apparatus as set forth in claim 8, wherein said personal key information of said first transactor is information relating to the charging of said first transactor.

10. An authentication apparatus as set forth in claim 9, wherein said first transmitting means transmits the second request further including said personal key information of said first transactor to said second transactor.

11. An authentication apparatus as set forth in claim 7, further comprising a storage means for storing log information indicating a log of said transaction.

12. An authentication apparatus as set forth in claim 7, further comprising a decrypting means for decrypting said received first request when said first request is encrypted.

13. An authentication apparatus as set forth in claim 7, further comprising an encrypting means for

encrypting said second request.

14. An authentication apparatus as set forth in claim 7, further comprising a decrypting means for decrypting said received reply when said reply is encrypted.

15. An authentication apparatus as set forth in claim 7, further comprising an encrypting means for encrypting said second authentication information.

16. An authentication system for authenticating a transaction performed between at least two parties via a network,

said authentication system comprising:

a first communication apparatus used by a first transactor,

a second communication apparatus used by a second transactor, and

an authentication apparatus for authenticating said transaction,

wherein

said first communication apparatus transmits a first request including personal identification information of the first transactor and information indicating the transaction content to said authentication apparatus, and

said authentication apparatus comprises:

a first receiving means for receiving said first request from said first transactor,

a first authenticating means for authenticating a legitimacy of said first transactor and generating first authentication information in response to said first request,

a first transmitting means for transmitting a second request including said first authentication information and the content of said transaction to said second transactor,

a second receiving means for receiving a reply with respect to said second request from said second transactor,

a second authenticating means for authenticating a legitimacy of said second transactor and generating second authentication information in response to said reply, and

a second transmitting means for transmitting said second authentication information to said first transactor.

17. An authentication system as set forth in claim 16, wherein

said first receiving means receives said first request further including personal key information of said first transactor and

said first authenticating means authenticates the legitimacy of said first transactor based on said personal key information.

18. An authentication system as set forth in claim 17, wherein said personal key information of said first transactor is information relating to charging of said first transactor.

19. An authentication method for authenticating a transaction performed between at least two parties via a network,

said authentication method comprising the steps of:

receiving a first request including personal identification information of a first transactor and information indicating transaction content from said first transactor,

authenticating a legitimacy of said first transactor and generating first authentication information in response to said first request,

transmitting a second request including said first authentication information and the content of said transaction to a second transactor,

receiving a reply with respect to said second request from said second transactor,

authenticating a legitimacy of said second

transactor in accordance with said reply and generating second authentication information, and

transmitting said second authentication information to said first transactor.

20. An authentication method as set forth in claim 19, further comprising the steps of:

receiving said first request further including personal key information of said first transactor and

authenticating the legitimacy of said first transactor based on said personal key information.

21. An authentication method as set forth in claim 20, wherein said personal key information of said first transactor is information relating to charging of said first transactor.

22. An authentication method as set forth in claim 21, further comprising the step of sending a second request further including said personal key information of said first transactor to said second transactor.

23. An authentication method as set forth in claim 22, wherein said second transactor performs accounting using the personal key information of said first transactor.

24. An authentication apparatus holding information relating to a first transactor and authenticating a transaction between said first transactor and a second

transactor performed via a network while communicating with another authentication apparatus holding information relating to said second transactor,

said authentication apparatus comprising:

a transmitting and receiving means for transmitting a second request including information specifying said second transactor in response to a first request from said first transactor including information indicating said transaction content and information specifying said second transactor to said second authentication apparatus, receiving first signature information indicating an authentication result by said second authentication apparatus in response to said second request, transmitting a third request including information relating to said transaction content included in said first request and said first signature information to an apparatus used by said second transactor, and receiving a predetermined reply from an apparatus used by said second transactor in response to the related third request,

a storage means for storing a log of said transaction when receiving said predetermined reply, and

a signature producing means for producing second signature information to be transmitted to the apparatus used by said first transactor via said

transmitting and receiving means when receiving said predetermined reply and indicating the authentication result of the legitimacy of said transaction.

25. An authentication apparatus as set forth in claim 24, further comprising an encrypting means, and wherein

said transmitting and receiving means receives an encryption key used for the communication with said second transactor from said other authentication apparatus in response to said second request and transmits the information relating to said transaction content encrypted by using said encryption key at said encrypting means and said first signature information to the apparatus used by said second transactor.

26. An authentication apparatus as set forth in claim 24, wherein

said transmitting and receiving means receives said predetermined reply including the identification information used for identifying said second transactor by said other authentication apparatus from the apparatus used by said second transactor, and

said storage means stores a log of said transactions generated by using said identification information.

27. An authentication apparatus as set forth in

claim 24, wherein said transmitting and receiving means transmits the third request including information other than the information relating to the charging of said first transactor in the information relating to said transaction content included in said first request and said first signature information to the apparatus used by said second transactor.

28. An authentication apparatus as set forth in claim 24, wherein said transmitting and receiving means transmits the third request including the information relating to said transaction content included in said first request, said first signature information, and the encryption key used for the communication with the related authentication apparatus to the apparatus used by said second transactor.

29. An authentication apparatus as set forth in claim 24, further comprising a charge processing means for the charge processing for the authentication relating to said transaction.

30. An authentication apparatus as set forth in claim 24, wherein said charge processing means performs processing for determining a rate of the charge for the authentication relating to said transaction with said other authentication apparatus.

31. An authentication apparatus as set forth in

claim 24, wherein said transmitting and receiving means receives said predetermined reply from the apparatus used by said second transactor when said second transactor confirms the legitimacy of said first signature information and agrees to the related transaction.

32. An authentication apparatus as set forth in claim 24, wherein said receiving means sends said second signature information to the apparatus used by said second transactor.

33. An authentication system for authenticating a transaction performed between at least two parties via a network,

said authentication system comprising:

a first authentication apparatus for authenticating a transaction relating to a first transactor and

a second authentication apparatus for authenticating a transaction relating to a second transactor,

wherein

said first authentication apparatus transmits a second request including information specifying said second transactor to said second authentication apparatus in response to a first request by said first transactor including information indicating said transaction content

and information specifying said second transactor, receives first signature information from said second authentication apparatus in response to said second request, transmits a third request including information relating to said transaction content included in said first request and said first signature information to the apparatus used by said second transactor, stores a log of said transaction when receiving a predetermined reply from said second transactor in response to the related third request, and provides second signature information for authenticating a legitimacy of said transaction to said first transactor.

34. An authentication system as set forth in claim 33, further comprising an encrypting means, and

wherein

said transmitting and receiving means receives an encryption key used for communication with said second transactor from said second authentication apparatus in response to said second request and transmits information relating to said transaction content encrypted by using said encryption key at said encrypting means and said first signature information to the apparatus used by said second transactor.

35. An authentication system as set forth in claim 33, wherein

said transmitting receiving means of said first authentication apparatus receives said predetermined reply including identification information for use by said second authentication apparatus for identifying said second transactor from said second transactor and

said storage means stores said transaction log generated using said identification information.

36. An authentication system as set forth in claim 33, wherein said first authentication apparatus provides said second signature information to said second transactor.

37. An authentication method for authenticating a transaction between a first transactor and a second transactor performed via a network by using a first authentication apparatus for authenticating a transaction relating to the first transactor and a second authentication apparatus for authenticating a transaction relating to the second transactor,

said authentication method comprising the steps of:

issuing a first request including information indicating said transaction content and information specifying said second transactor from said first transactor to said first authentication apparatus,

transmitting a second request including the

information specifying said second transactor from said first authentication apparatus to said second authentication apparatus in response to said first request,

transmitting first signature information indicating the authentication result by the related second authentication apparatus to said first authentication apparatus from said second authentication apparatus in response to said second request,

transmitting a third request including the information relating to said transaction content included in said first request and said first signature information from said first authentication apparatus to an apparatus used by said second transactor,

issuing a predetermined reply from the apparatus used by said second transactor to said first authentication apparatus in response to the related third request and,

in accordance with said predetermined reply, storing a log of said transaction, producing second signature information indicating the authentication result of the legitimacy of said transaction, and transmitting the related second signature information to the apparatus used by said first transactor by said first authentication apparatus.

38. An authentication method as set forth in claim 37, further comprising the steps of:

sending an encryption key for use in communication with said second transactor from said second authentication apparatus to said first authentication apparatus in accordance with said second request and

having said first authentication apparatus encrypt said information relating to transaction content and said first signature information using said encryption key, then send them to the apparatus used by said second transactor.

39. An authentication method as set forth in claim 37, further comprising the steps of having said first authentication apparatus receive said predetermined reply including identification information for use by said second authentication apparatus in identifying said second transactor from the apparatus used by said second transactor and store a log of said transaction generated using said identification information.

40. An authentication method as set forth in claim 37, further comprising the steps of sending a third request including information other than the information relating to the charging of said first transactor in the information relating to said transaction content included

in said first request and said first signature information from the first authentication apparatus to the apparatus used by said second transactor.

41. An authentication method as set forth in claim 37, further comprising the steps of sending a third request including information relating to the charging of said first transactor included in said first request, said first signature information, and an encryption key for use in communication with said authentication apparatus from the first authentication apparatus to the apparatus used by said second transactor.

42. An authentication method as set forth in claim 37, further comprising the steps of performing processing for determining a rate of charging for authentication relating to said transaction between said first authentication apparatus and said second authentication apparatus.

43. An authentication method as set forth in claim 37, further comprising the steps of sending said predetermined reply from the apparatus used by said second transactor to said first authentication apparatus when said second transactor confirms the legitimacy of said first signature information and agrees to the related transaction.

44. An authentication method as set forth in claim

37, further comprising the steps of sending said second signature information from said first authentication apparatus to the apparatus used by said second transactor.

45. An authentication method for authenticating a transaction between a first transactor and a second transactor performed via a network by using a first authentication apparatus for authenticating a transaction relating to the first transactor and a second authentication apparatus for authenticating a transaction relating to the second transactor,

said authentication method comprising the steps of:

issuing a first request including information indicating said transaction content, personal key information of said first transactor, and information specifying said second transactor from said first transactor to said first authentication apparatus,

transmitting a second request obtained by deleting said personal key from said first request from said first authentication apparatus to said second authentication apparatus in response to said first request,

transmitting a third request including information indicating the content of said transaction

from said second authentication apparatus to the apparatus used by said second transactor in response to said second request,

transmitting a first reply from the apparatus used by said second transactor to said second authentication apparatus in response to said third request,

transmitting a second reply including payment method information indicating a payment method to said second transactor from said second authentication apparatus to said first authentication apparatus in accordance with said first reply, and

managing a payment relating to said transaction between said first transactor and said second transactor based on said payment method information by said first authentication apparatus.

46. An authentication method as set forth in claim 45, wherein said first authentication apparatus performs processing for receiving a payment from said first transactor relating to said transaction, processing for paying a part of said payment to said second transactor in accordance with said transaction, and processing for receiving a remainder of said payment as a fee.

47. An authentication method as set forth in claim 45, wherein said first authentication apparatus inquires

to said second authentication apparatus whether or not said second transactor has contracted with said second authentication apparatus in response to said first request and, when receiving an answer indicating it has contracted with it from said second authentication apparatus, transmits said second request to said second authentication apparatus.

48. An authentication method as set forth in claim 45, wherein when receiving said second reply, said first authentication apparatus transmits a third reply including signature information including the result of authentication performed by the related first authentication apparatus for said transactor to the apparatus used by said first transactor.

49. An authentication method as set forth in claim 45, wherein said first authentication apparatus encrypts said third reply by using a secret key corresponding to the related first authentication apparatus and transmits the same to the apparatus used by said first transactor.

50. An authentication method as set forth in claim 45, wherein said first authentication apparatus transmits said second request further including the signature information indicating the result of authentication performed by the related first authentication apparatus for said transaction to said second authentication

apparatus.

51. An authentication method as set forth in claim 45, wherein said second authentication apparatus transmits said third request further including signature information indicating the result of authentication performed by the related second authentication apparatus for said transaction to the apparatus used by said second transactor.

52. An authentication method as set forth in claim 45, wherein said first authentication apparatus encrypts said second request by using a secret key corresponding to the related first authentication apparatus and transmits the same to said second authentication apparatus.

53. An authentication method as set forth in claim 45, wherein said second authentication apparatus encrypts said third request by using a secret key corresponding to the related second authentication apparatus and transmits the same to the apparatus used by said second transactor.

54. An authentication method as set forth in claim 45, wherein the apparatus of said second transactor encrypts said first reply by using a secret key of the related second transactor and transmits the same to said second authentication apparatus.

55. An authentication method as set forth in claim

45, wherein said second authentication apparatus encrypts said second reply by using a secret key corresponding to the related second authentication apparatus and transmits the same to said first authentication apparatus.

56. An authentication apparatus holding information relating to a first transactor and authenticating a transaction between said first transactor and a second transactor performed via a network while communicating with another authentication apparatus holding information relating to said second transactor,

said authentication apparatus comprising:

a receiving means for receiving a first request including information indicating said transaction content, personal key information of said first transactor, and information specifying said second transactor from said first transactor and receiving a reply including payment method information indicating a payment method to said second transactor from said other authentication apparatus,

a transmitting means for transmitting a second request obtained by deleting said personal key from said first request to said other authentication apparatus in response to said first request, and

a charging means for managing a payment relating to said transaction between said first

transactor and said second transactor based on said payment method information.

57. An authentication apparatus as set forth in claim 56, wherein said charging means performs processing for receiving a payment from said first transactor relating to said transaction, processing for paying a part of said payment to said second transactor in accordance with said transaction, and processing for receiving a remainder of said payment as a fee.

58. An authentication apparatus as set forth in claim 56, wherein said transmitting means inquires to said other authentication apparatus whether or not said second transactor has contracted with said second authentication apparatus in response to said first request and, when receiving an answer indicating it has contracted with it from said other authentication apparatus, transmits said second request to said other authentication apparatus.

59. An authentication apparatus as set forth in claim 56, wherein when said receiving means receives said second reply, said transmitting means transmits a reply including signature information including the result of authentication performed by itself for said transactor to the apparatus used by said first transactor.

60. An authentication apparatus as set forth in

claim 59, wherein said transmitting means encrypts said reply by using a secret key corresponding to the related first authentication apparatus and transmits the same to the apparatus used by said first transactor.

61. An authentication apparatus as set forth in claim 56, wherein said transmitting means transmits said second request further including the signature information indicating the result of authentication performed by the related first authentication apparatus for said transaction to said other authentication apparatus.

62. An authentication system comprising a first authentication apparatus for authenticating a transaction relating to a first transactor and a second authentication apparatus for authenticating a transaction relating to a second transactor and authenticating a transaction between said first transactor and said second transactor performed via a network,

said authentication system comprising the steps of:

issuing a first request including information indicating said transaction content, personal key information of said first transactor, and information specifying said second transactor from said first transactor to said first authentication apparatus,

transmitting a second request obtained by deleting said personal key from said first request from said first authentication apparatus to said second authentication apparatus in response to said first request,

transmitting a third request including the information indicating the content of said transaction from said second authentication apparatus to the apparatus used by said second transactor in response to said second request,

transmitting a first reply from an apparatus used by said second transactor to said second authentication apparatus in response to said third request,

transmitting a second reply including payment method information indicating a payment method to said second transactor from said second authentication apparatus to said first authentication apparatus in accordance with said first reply, and

managing a payment relating to said transaction between said first transactor and said second transactor based on said payment method information by said first authentication apparatus.

63. An authentication system as set forth in claim 62, wherein said first authentication apparatus performs

processing for receiving a payment from said first transactor relating to said transaction, processing for paying a part of said payment to said second transactor in accordance with said transaction, and processing for receiving a remainder of said payment as a fee.

64. An authentication system as set forth in claim 62, wherein said first authentication apparatus inquires to said second authentication apparatus whether or not said second transactor has contracted with said second authentication apparatus in response to said first request and, when receiving an answer indicating it has contracted with it from said second authentication apparatus, transmits said second request to said second authentication apparatus.

65. An authentication system as set forth in claim 62, wherein when receiving said second reply, said first authentication apparatus transmits a third reply including signature information including the result of authentication performed by the related first authentication apparatus for said transactor to the apparatus used by said first transactor.

66. An authentication system as set forth in claim 62, wherein said first authentication apparatus encrypts said third reply by using a secret key corresponding to the related first authentication apparatus and transmits

the same to the apparatus used by said first transactor.

67. An authentication system as set forth in claim 62, wherein said first authentication apparatus transmits said second request further including the signature information indicating the result of authentication performed by the related first authentication apparatus for said transaction to said second authentication apparatus.

68. An authentication system as set forth in claim 62, wherein said second authentication apparatus transmits said third request further including signature information indicating the result of authentication performed by the related second authentication apparatus for said transaction to the apparatus used by said second transactor.

69. An authentication system as set forth in claim 62, wherein said first authentication apparatus encrypts said second request by using a secret key corresponding to the related first authentication apparatus and transmits the same to said second authentication apparatus.

70. An authentication system as set forth in claim 62, wherein said second authentication apparatus encrypts said third request by using a secret key corresponding to the related second authentication apparatus and transmits

the same to the apparatus used by said second transactor.

71. An authentication system as set forth in claim 62, wherein the apparatus of said second transactor encrypts said first reply by using a secret key of the related second transactor and transmits the same to said second authentication apparatus.

72. An authentication system as set forth in claim 62, wherein said second authentication apparatus encrypts said second reply by using a secret key corresponding to the related second authentication apparatus and transmits the same to said first authentication apparatus.

73. An authentication method comprising the steps of:

having an authentication apparatus divide authentication information of a user into first authentication information and second authentication information,

providing a portable memory device storing said second authentication information to said user,

transmitting an authentication information request from a terminal capable of accessing said portable memory device to said authentication apparatus,

transmitting said first authentication information from said authentication apparatus to said terminal when said authentication apparatus decides said

authentication information request is by a legitimate user, and

having said terminal restore said authentication information by using said first authentication information received from said authentication apparatus and said second authentication information read from said portable memory device.

74. An authentication method as set forth in claim 73, wherein

said authentication information request includes transmission destination information designating a destination of transmission of said first authentication information, and

said authentication apparatus transmits said first authentication information to said terminal designated by said transmission destination information.

75. An authentication method as set forth in claim 73, wherein said authentication apparatus stores transmission destination information corresponding to said user in advance and decides that said authentication information request is by the legitimate user when said transmission destination information included in said authentication information request is present in the related stored transmission destination information.

76. An authentication method as set forth in claim

73, wherein said terminal stores said received first authentication information and restores said authentication information when deciding that said first authentication information received from said authentication apparatus and said second authentication information read from said portable memory device correspond.

77. An authentication method as set forth in claim 73, wherein said terminal transmits to said authentication apparatus a notification indicating that said first authentication information received from said authentication apparatus and said second authentication information read from said portable memory do not correspond when this is the case.

78. An authentication method as set forth in claim 73, wherein said authentication apparatus generates said authentication information in response to a request from said user.

79. An authentication method as set forth in claim 73, wherein said authentication information is information produced by using a public key encryption.

80. An authentication method as set forth in claim 73, wherein said portable memory device is a smart card.

81. An authentication method comprising the steps of:

generating authentication information,

dividing said authentication information into first authentication information and second authentication information,

providing a portable memory device storing said second authentication information to a user, and

transmitting said first authentication information to a transmission destination designated by said authentication information request when deciding that the received authentication information request is by a legitimate user.

82. An authentication method as set forth in claim 81, further comprising the steps of:

storing in advance transmission destination information corresponding to the user and

deciding that said authentication information request is by a legitimate user when said transmission destination information included in said authentication information request is present in said stored transmission destination information.

83. An authentication method as set forth in claim 81, wherein said authentication information is information produced using public key encryption.

84. An authentication method as set forth in claim 81, wherein said portable memory device is a smart card.

85. An authentication apparatus comprising:

a controlling means for generating authentication information, dividing said authentication information into first authentication information and second authentication information, and deciding whether or not the received authentication information request is by a legitimate user,

a writing means for writing said second authentication information into a portable memory device,

a receiving means for receiving said authentication information request from a user of said portable memory device, and

a transmitting means for transmitting said first authentication information to a transmission destination designated by said authentication information request when it is decided that said authentication information request is by a legitimate user.

86. An authentication apparatus as set forth in claim 85, further comprising

a storage means for storing in advance transmission destination information corresponding to the user is further provided and

wherein

said controlling means decides that said authentication information request is by a legitimate

user when said transmission destination information included in said authentication information request is present in said stored transmission destination information.

87. An authentication apparatus as set forth in claim 85, wherein said authentication information is information produced using public key encryption.

88. An authentication apparatus as set forth in claim 85, wherein said portable memory device is a smart card.

89. A communication apparatus comprising:

a receiving means for receiving a request including personal identification information for identifying a user,

a storage means for storing said personal identification information and information of a transmission destination for transmitting a processing result in correspondence,

a processing means for performing predetermined processing in response to said request, and

a transmitting means for reading information of said transmission destination corresponding to said personal identification information included in said request from said storage means and transmitting the result of said processing to the transmission destination

specified by the related read information of said transmission destination.

90. A communication apparatus as set forth in claim 89, wherein

said receiving means receives a request including encrypted personal identification information, and

said communication apparatus further comprises a decrypting means for decrypting said personal identification information included in said received request.

91. A communication apparatus as set forth in claim 89, wherein said personal identification information is an identifier assigned to the user registered in the communication apparatus in advance.

92. A communication apparatus as set forth in claim 89, wherein the information of the transmission destination for transmitting the result of said processing is information provided by the transmitting side of said request to the related communication apparatus off-line.

93. A communication apparatus as set forth in claim 89, wherein the information of the transmission destination for transmitting said predetermined result is personal identification information for unambiguously

identifying said user in the network with the related communication apparatus connected thereto.

94. A communication apparatus as set forth in claim 89, wherein said processing is authentication processing.

95. A communication system comprising

a first communication apparatus and

a second communication apparatus connected via a network, wherein

said first communication apparatus comprises:

a first receiving means for receiving a request including personal identification information for identifying a user,

a storage means for storing said personal identification information and information of a transmission destination for transmitting a processing result in correspondence,

a processing means for performing predetermined processing in response to said request, and

a first transmitting means for reading the information of said transmission destination corresponding to said personal identification information included in said request from said storage means and transmitting the result of said processing to the transmission destination specified by the related read information of said transmission destination and wherein

said second communication apparatus comprises:

a second transmitting means for transmitting said request to said first communication apparatus,

a second receiving means for receiving the result of said processing from said first communication apparatus, and

an outputting means for outputting the result of the related received authentication processing.

96. A communication apparatus as set forth in claim 95, wherein

said first receiving means of said first communication apparatus receives said request including encrypted personal identification information, and

said first communication apparatus further comprises a decrypting means for decrypting said personal identification information included in said received request.

97. A communication apparatus as set forth in claim 95, wherein said personal identification information is an identifier assigned to the user registered in the first communication apparatus in advance.

98. A communication apparatus as set forth in claim 95, wherein the information of the transmission destination for transmitting the result of said processing is information provided by the user of said

second communication apparatus to the related first communication apparatus off-line.

99. A communication apparatus as set forth in claim 95, wherein the information of the transmission destination for transmitting said predetermined result is personal identification information for unambiguously identifying said user in the network with the related first communication apparatus connected thereto.

100. A communication method using a first communication apparatus and a second communication apparatus connected via a network,

said communication method comprising the steps of:

transmitting a request including personal identification information for identifying a user from said second communication apparatus to said first communication apparatus,

having said first communication apparatus perform predetermined processing in response to said request, and

having said first communication apparatus refer to a correspondence of said personal identification information and information of a transmission destination for transmitting the result of the processing produced in advance and transmit a result of said processing to the

transmission destination specified by information of the transmission destination corresponding to said personal identification information included in said request.

101. A communication method as set forth in claim 100, further comprising the step of having said second communication apparatus output the results of said processing received from said first communication apparatus.

102. A communication method as set forth in claim 100, further comprising the step of having said first communication apparatus receive said request including encrypted personal identification information and decrypt said personal identification information included in said received reply.

103. A communication method as set forth in claim 100, wherein said personal identification information is an identifier assigned to a user registered at said first communication apparatus in advance.

104. A communication method as set forth in claim 100, wherein the information of the transmission destination for transmitting the result of said processing is information provided by the transmitting side of said request to the related first communication apparatus off-line.

105. A communication method as set forth in claim

100, wherein the information of the transmission destination for transmitting said predetermined result is personal identification information for unambiguously identifying said user in the network with the related first communication apparatus connected thereto.

106. An authentication apparatus for authenticating a transaction performed between at least two parties via a network,

said authentication apparatus comprising:

a first receiving means for receiving a first request including personal key information of a first transactor and information indicating a transaction content from said first transactor,

a first authenticating means for authenticating a legitimacy of said first transactor based on said personal key information included in said first request and generating first authentication information,

a first transmitting means for transmitting a second request including information obtained by deleting the personal key information of said first transactor from said first request and including said first authentication information to a second transactor,

a second receiving means for receiving a reply with respect to said second request from said second transactor,

a second authenticating means for authenticating a legitimacy of said second transactor and generating second authentication information,

a second transmitting means for transmitting said second authentication information to said first transactor,

an identification information issuing means for issuing transaction identification information when receiving said first request, and

a log managing means for managing a log of the reception of said first request, transmission of said second request, and the reception of said reply by using said transaction identification information.

107. An authentication apparatus as set forth in claim 106, wherein said transaction log managing means generates log information for each of the reception of said first request, transmission of said second request, and reception of said reply and stores the related log information relating to said transaction identification information.

108. An authentication apparatus as set forth in claim 106, wherein said transmitting means transmits a second request further including said transaction identification information to said second transactor.

109. An authentication apparatus as set forth in

claim 106, wherein said second authenticating means authenticates the legitimacy of said reply based on said transaction identification information included in said reply and said log managed by said transaction log managing means.

110. An authentication apparatus as set forth in claim 106,

further comprising an account processing means for performing the account processing concerned in said transaction, and

wherein

said transaction log managing means stores log information indicating that the account processing is terminated in correspondence with said transaction identification information after the end of said account processing.

111. An authentication apparatus as set forth in claim 106, wherein the personal key information of said first transactor is information relating to the charging of said first transactor.

112. An authentication system for authenticating a transaction performed between at least two parties via a network,

said authentication system comprising

a first communication apparatus used by a first

transactor,

a second communication apparatus used by a second transactor, and

an authentication apparatus for authenticating said transaction, wherein

said authentication apparatus comprises:

a first receiving means for receiving a first request including personal key information of said first transactor and including an information indicating the transaction content from said first transactor,

a first authenticating means for authenticating a legitimacy of said first transactor based on said personal key information included in said first request and generating first authentication information,

a first transmitting means for transmitting a second request including information obtained by deleting the personal key information of said first transactor from said first request and including said first authentication information to said second transactor,

a second receiving means for receiving a reply with respect to said second request from said second transactor,

a second authenticating means for authenticating a legitimacy of said second transactor in accordance with said reply and generating second

authentication information,

a second transmitting means for transmitting said second authentication information to said first transactor,

a transaction identification information issuing means for issuing transaction identification information when receiving said first request, and

a transaction log managing means for managing a log of the reception of said first request, transmission of said second request, and the reception of said reply by using said transaction identification information.

113. An authentication method for authenticating a transaction performed between at least two parties via a network,

said authentication method comprising the steps of:

receiving a first request including personal key information of a first transactor and including information indicating a transaction content from said first transactor,

issuing transaction identification information in accordance with the related reception,

authenticating a legitimacy of said first transactor based on said personal key information included in said first request and generating first

authentication information,

transmitting a second request including information obtained by deleting the personal key information of said first transactor from said first request and including said first authentication information to said second transactor,

receiving a reply with respect to said second request from said second transactor,

authenticating a legitimacy of said second transactor in accordance with said reply and generating second authentication information,

transmitting said second authentication information to said first transactor, and

managing a log of the reception of said first request, transmission of said second request, and the reception of said reply by using said transaction log information.

114. An authentication method as set forth in claim 113, further comprising the step of generating log information for each of the reception of said first request, transmission of said second request, and the reception of said reply and storing the related log information in correspondence with said transaction identification information.

115. An authentication method as set forth in claim

114, further comprising the step of transmitting a second request further including said transaction identification information to said second transactor.

116. An authentication method as set forth in claim 114, further comprising the step of authenticating the legitimacy of said reply based on said transaction identification information included in said reply and said log managed by said transaction log managing means.

117. An authentication method as set forth in claim 114, further comprising the steps of

performing the account processing concerned in said transaction and

storing log information indicating that the account processing is terminated in correspondence with said transaction identification information after the end of said account processing.

118. An authentication method as set forth in claim 114, further comprising the steps of

receiving said reply including personal key information of said second transactor and

authenticating the legitimacy of said second transactor based on the personal key information of said second transactor.

119. An authentication method as set forth in claim 118, wherein the personal key information of said first

transactor is information relating to the charging of said first transactor and the personal key information of said second transactor is information relating to the charging of said second transactor.

120. A communication control apparatus for controlling communication processing carried out in a second communication apparatus on a network in response to a request from one or more first communication apparatuses,

said communication control apparatus comprising:

a storage means for storing apparatus identification information for identifying said first communication apparatus,

a transmitting means for transmitting a request including said apparatus identification information corresponding to the related first communication apparatus to said second communication apparatus in response to the request from said first communication apparatus,

a receiving means for receiving a reply including the apparatus identification information for identifying the transmitting apparatus of said request from said second communication apparatus, and

a controlling means for deciding if said

request corresponding to said received reply is by a legitimate first communication apparatus whose apparatus identification information is stored in said storage means based on whether or not said apparatus identification information included in said reply and said apparatus identification information stored in said storage means coincide.

121. A communication control apparatus as set forth in claim 120, wherein said controlling means sends a predetermined notification to said second communication apparatus when said apparatus identification information included in said reply and said apparatus identification information stored in said storage means do not coincide.

122. A communication control apparatus as set forth in claim 120, wherein said controlling means sends a predetermined notification to an apparatus of the destination of a transaction where the result of processing included in said reply is used when said apparatus identification information included in said reply and said apparatus identification information stored in said storage means do not coincide.

123. A communication control apparatus as set forth in claim 120, wherein said transmitting means transmits said request including personal identification information received from said first communication

apparatus and including said apparatus identification information corresponding to the related first communication apparatus to said second communication apparatus.

124. A communication control apparatus as set forth in claim 120, wherein said storage means stores said apparatus identification information received from said first communication apparatus.

125. A communication control apparatus as set forth in claim 124, wherein said storage means stores said apparatus identification information received from said first communication apparatus when a power of the related communication control apparatus is turned on.

126. A communication control apparatus as set forth in claim 120, wherein said controlling means writes a communication log between said first communication apparatus and said second communication apparatus in said storage means.

127. A communication control apparatus as set forth in claim 120, wherein said controlling means transmits the processing result of said second communication apparatus included in said reply to said first communication apparatus of the transmission destination of said request.

128. A communication control apparatus as set forth

in claim 120, wherein said controlling means controls the communication so that said first communication apparatus in a stand-by state enters an operating state in accordance with the information received from said receiving means.

129. A communication control apparatus as set forth in claim 120, wherein said controlling means controls the communication between a network to which said first communication apparatus is connected and a network to which said second communication apparatus is connected.

130. A communication control apparatus as set forth in claim 120, wherein said controlling means performs processing as a gateway.

131. A communication control apparatus as set forth in claim 120, wherein said apparatus identification information is an identifier that can unambiguously identify the related communication apparatus assigned by the manufacturer of said first communication apparatus.

132. A communication control apparatus as set forth in claim 120, wherein said personal identification information is an identifier assigned to a registered user in advance.

133. A communication control apparatus as set forth in claim 120, wherein said receiving means receives said reply including the result of authentication processing

performed by said second communication apparatus from said second communication apparatus.

134. A communication system for controlling at a communication control apparatus communication relating to processing carried out at a second communication apparatus on a network in response to a request from one or more first communication apparatuses, wherein

said communication control apparatus comprises:

a first storage means for storing apparatus identification information for identifying said first communication apparatus,

a first transmitting means for transmitting a request including said apparatus identification information corresponding to the related first communication apparatus and including personal identification information to said second communication apparatus in response to the request from said first communication apparatus,

a first receiving means for receiving a reply including the apparatus identification information for identifying the transmitting apparatus of said request from said second communication apparatus, and

a controlling means for deciding if said request corresponding to said received reply is by a legitimate first communication apparatus whose apparatus

identification information is stored in said first storage means based on whether or not said apparatus identification information included in said reply and said apparatus identification information stored in said first storage means coincide and wherein

said second communication apparatus comprises:

a second receiving means for receiving said request,

a second storage means for storing said request,

a second storage means for storing said personal identification information and information of a transmission destination for transmitting a processing result in correspondence,

a processing means for performing predetermined processing in response to said request, and

a second transmitting means for reading the information of said transmission destination corresponding to said personal identification information included in said request from said second storage means and transmitting the result of said processing and said apparatus identification information included in said request in correspondence to the transmission destination specified by the related read transmission destination information.

135. A communication method for controlling at the communication control apparatus communication relating to processing carried out at a second communication apparatus on a network in response to a request from one or more first communication apparatuses,

said communication method comprising the steps of:

transmitting a request including apparatus identification information corresponding to the related first communication apparatus and including personal identification information from said communication control apparatus to said second communication apparatus in response to the request issued from said first communication apparatus to said communication control apparatus,

having said second communication apparatus perform predetermined processing in response to said received request,

having said second communication apparatus transmit a reply including the result of said processing and including said apparatus identification information included in said request to said communication control apparatus based on the information of the transmission destination corresponding to said personal identification information included in said request, and

having said communication control apparatus decide if said request corresponding to said received reply is by a legitimate first communication apparatus based on whether or not said apparatus identification information included in said received reply and said apparatus identification information of said first communication apparatus held in advance coincide.

136. A communication method as set forth in claim 135, wherein said communication control apparatus sends a predetermined notification to said second communication apparatus when said apparatus identification information included in said received reply and said apparatus identification information of said first communication apparatus held in advance do not coincide.

137. A communication method as set forth in claim 135, wherein said communication control apparatus sends a predetermined notification to an apparatus of a destination of the transaction where the result of processing included in the reply is used when said apparatus identification information included in said received reply and said apparatus identification information of said first communication apparatus held in advance do not coincide.

138. An authentication apparatus for performing authentication processing in response to an

authentication request,

said authentication apparatus comprising:

a receiving means for receiving said authentication request including personal identification information for identifying a user and including apparatus identification information for identifying a transmitting apparatus of said authentication request,

a storage means for storing said personal identification information and the information of the transmission destination for transmitting an authentication result in correspondence,

an authentication processing means for performing authentication processing in response to said authentication request, and

a transmitting means for reading the information of said transmission destination corresponding to said personal identification information included in said authentication request from said storage means and transmitting the result of said authentication processing and said apparatus identification information included in said authentication request in correspondence to the transmission destination specified by the related read transmission destination information.

139. An authentication apparatus as set forth in claim 138, wherein

said receiving means receives said authentication request including encrypted personal identification information and apparatus identification information, and

said authentication apparatus further comprises a decrypting means for decrypting said personal identification information and said apparatus identification information included in said received authentication request.

140. An authentication apparatus as set forth in claim 138, wherein said receiving means receives said authentication request further including third identification information used for the charge processing relating to said user.

141. An authentication apparatus as set forth in claim 138, wherein said personal identification information is an identifier assigned to a registered user in advance.

142. An authentication apparatus as set forth in claim 138, wherein said apparatus identification information is an identifier capable of unambiguously identifying the related apparatus assigned by the manufacturer of said apparatus.

143. An authentication apparatus for performing authentication processing relating to a transaction

performed via a network,

said authentication apparatus comprising:

a receiving means for receiving an authentication request by a user engaging in a transaction including personal identification information for identifying the user, transaction information indicating content of the transaction, and apparatus identification information for identifying a transmitting apparatus of said authentication request,

a storage means for storing said personal identification information and information of a transmission destination for transmitting the authentication result in correspondence,

an authentication processing means for transmitting said transaction information included in said received authentication request to an apparatus of the user designated by said authentication request and performing predetermined authentication processing in accordance with a reply from the apparatus of the related designated user, and

a transmitting means for reading the information of said transmission destination corresponding to said personal identification information included in said authentication request from said storage means and transmitting the result of said authentication

processing and said apparatus identification information included in said authentication request in correspondence to the transmission destination specified by the related read transmission destination information.

144. An authentication apparatus as set forth in claim 143, wherein said authentication processing means attaches signature information indicating the authentication result of the related authentication apparatus to said transaction information and transmits the same to the apparatus of said designated user and generates signature information of the related authentication apparatus of the result of said authentication processing in accordance with the reply from said designated user.

145. An authentication apparatus as set forth in claim 143, wherein said storage means stores log information of transactions between the user issuing said authentication request and said designated user.

146. An authentication apparatus as set forth in claim 143, wherein

said receiving means receives said authentication request including encrypted personal identification information and apparatus identification information, and

said authentication apparatus further comprises

a decrypting means for decrypting said personal identification information and said apparatus identification information included in said received authentication request.

147. An authentication apparatus as set forth in claim 143, wherein said receiving means receives said authentication request further including third identification information used for the charge processing relating to said user.

148. An authentication apparatus as set forth in claim 143, further comprising a charge processing means for performing charge processing for the authentication relating to said transaction.

149. A processing apparatus for requesting authentication relating to a transaction performed via a network,

said processing apparatus comprising:

a transmitting means for transmitting said authentication request including personal identification information for identifying a user and apparatus identification information for identifying a related processing apparatus,

a receiving means for receiving an authentication reply including identification information for identifying a transmitting apparatus of the

authentication request, and

a controlling means for deciding whether or not said personal identification information and the identification information included in said authentication reply coincide.

150. A processing apparatus as set forth in claim 149, wherein said controlling means sends a predetermined notification to the transmitting side of said authentication reply when deciding that said apparatus identification information and the identification information included in said authentication reply do not coincide.

151. A processing apparatus as set forth in claim 149, wherein said controlling means sends a predetermined notification to the apparatus of the destination of transaction where the result of the related authentication included in said authentication reply is used when deciding that said apparatus identification information and the identification information included in said authentication response do not coincide.

152. An authentication system comprising a processing apparatus and an authentication apparatus connected via a network, wherein

said authentication apparatus comprises:

a receiving means for receiving an

authentication request including personal identification information for identifying a user and apparatus identification information for identifying a transmitting apparatus of said authentication request,

a storage means for storing said personal identification information and information of a transmission destination for transmitting the authentication result in correspondence,

an authentication processing means for performing authentication processing in response to said authentication request, and

a transmitting means for reading the information of said transmission destination corresponding to said personal identification information included in said authentication request from said storage means and transmitting an authentication reply including the result of said authentication processing and said apparatus identification information included in said authentication request to the transmission destination specified by the related read transmission destination information and wherein

said processing apparatus comprises:

a transmitting means for transmitting said authentication request including said personal identification information and said apparatus

identification information for identifying the related processing apparatus,

a receiving means for receiving said authentication reply, and

a controlling means for deciding whether or not said apparatus identification information of the related processing apparatus and said apparatus identification information included in said authentication reply coincide.

153. An authentication system as set forth in claim 152, wherein said processing apparatus sends a predetermined notification to the transmitting apparatus of the authentication reply when deciding that the identification information included in said authentication reply does not coincide.

154. An authentication system as set forth in claim 152, wherein said processing apparatus sends a predetermined notification to the apparatus of the destination of transaction where the result of said authentication included in said authentication reply is used when deciding that the identification information included in said authentication reply does not coincide.

155. An authentication method using a processing apparatus and an authentication apparatus connected via a network,

said authentication method comprising the steps of:

transmitting an authentication request including personal identification information for identifying a user and apparatus identification information for identifying a related processing apparatus from said processing apparatus to said authentication apparatus,

performing authentication processing in response to said authentication request at said authentication apparatus,

transmitting an authentication reply including the result of said authentication processing and said apparatus identification information included in said authentication request to said processing apparatus specified by the information of said transmission destination corresponding to said personal identification information included in said authentication request from said authentication apparatus, and

having said processing apparatus decide whether or not said apparatus identification information included in said authentication reply received from said authentication apparatus, said apparatus identification information of the related processing apparatus, and said apparatus identification information included in said

authentication reply coincide.

156. An authentication method as set forth in claim 155, wherein said processing apparatus sends a predetermined notification to said authentication apparatus when deciding that the identification information included in said authentication reply does not coincide.

157. An authentication method as set forth in claim 155, wherein said processing apparatus sends a predetermined notification to the apparatus of the destination of transaction where the result of said authentication included in said authentication reply is used when deciding that the identification information included in said authentication reply does not coincide.

158. An information storage method comprising of the steps of

dividing predetermined information into a plurality of modules each independently maintaining confidentiality of the predetermined information and

storing said plurality of modules on storage media different from each other or in different regions of an identical storage medium.

159. An information storage method as set forth in claim 158, wherein the plurality of storage media different from each other and with said plurality of

modules stored thereon are storage media physically independent from each other.

160. An information storage method as set forth in claim 158, wherein

said predetermined information is encrypted, and

the information obtained by the related encryption is divided into said plurality of modules each independently maintaining the confidentiality of the predetermined information.

161. An information storage method as set forth in claim 158, wherein

said plurality of modules are encrypted, and

the plurality of modules obtained by the encryption are stored on storage media different from each other or in different regions of an identical storage medium.

162. An information restoration method comprising the steps of:

reading modules from a plurality of storage media or different regions of an identical storage medium when a plurality of modules each independently maintaining confidentiality of the predetermined information are stored on a plurality of storage media different from each other or in different regions of an

identical storage medium and

combining the related read modules to restore said predetermined information.

163. An information restoration method as set forth in claim 162, wherein the plurality of storage media different from each other and with said plurality of modules stored therein are storage media physically independent from each other.

164. An information restoration method as set forth in claim 162, wherein said read modules are combined and then decrypted to restore said predetermined information.

165. An information restoration method as set forth in claim 162, wherein said read modules are decrypted and then combined to restore said predetermined information.

166. An information storage device comprising

an information dividing means for dividing said predetermined information into a plurality of modules each independently maintaining the confidentiality of the predetermined information and

a writing means for writing said plurality of modules on storage media different from each other or in different regions of an identical storage medium.

167. An information storage device as set forth in claim 166, wherein said plurality of storage media different from each other on which the plurality of

modules are stored are storage media physically independent from each other.

168. An information storage device as set forth in claim 166, wherein

said device further comprises an encrypting means for encrypting said predetermined information and

said information dividing means divides the information obtained by the encryption into said plurality of modules each independently maintaining the confidentiality of the predetermined information.

169. An information storage device as set forth in claim 166, wherein

said device further comprises an encrypting means for encrypting said plurality of modules and

said writing means writes the plurality of modules obtained by the encryption in storage media different from each other or in different regions of an identical storage medium.

170. An information restoration device comprising

a reading means for reading modules from a plurality of storage media or different regions of an identical storage medium when a plurality of modules each independently maintaining the confidentiality of the predetermined information are stored on a plurality of storage media different from each other or in the

different regions of the identical storage medium and

an information combining means for combining the related read modules to restore said predetermined information.

171. An information restoration device as set forth in claim 170, wherein said plurality of storage media different from each other on which the plurality of modules are stored are storage media physically independent from each other.

172. An information restoration device as set forth in claim 170, further comprising a decrypting means for decrypting the information obtained by combining the modules.

173. An information restoration device as set forth in claim 170, wherein

said device further comprises a decrypting means for decrypting said read modules and

said information combining means combines said decrypted modules to restore said predetermined information.

174. A computer readable storage medium storing one module among a plurality of modules when predetermined information is divided into a plurality of modules each independently maintaining the confidentiality of the predetermined information.